21.   (New) The apparatus claim 20, wherein the DMT modulated carrier signal includes cyclic extensions.

22.   (New) The apparatus of claim 21, wherein the cyclic extensions include a cyclic prefix appended to the beginning of the DMT modulated carrier signal and a cyclic suffix appended to the end of the DMT modulated carrier signal and wherein the means for applying an autocorrelation function further comprise:

means for applying an autocorrelation function to the DMT modulated carrier signal using a delayed copy of the DMT modulated carrier signal in order to correlate the cyclic extensions of the DMT modulated carrier signal.

23.   (New) The apparatus of claim 19, wherein the means for detecting correlation maxima further comprise:

means for using the amplitude of the correlation maxima as a measure of power of the crosstalk signal.

REMARKS

This is a Preliminary Amendment in which claims 1-8 have been amended and claims 9-23 have been added. An early and favorable action is respectfully requested. If there is a fee occasioned by this response that is not covered by an enclosed check, please charge any deficiency to Deposit Account No. 23/2825.

Respectfully submitted,

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MARKED UP CLAIMS

1.   (Amended) In a telecommunications transmission system using a [DTM] <u>DMT</u> system as multicarrier system and having at least two VDSL systems, each comprising a pair of modems, said at least two VDSL systems belonging to a single binder group common to [both] <u>the at least two</u> VDSL systems, a method in said DMT system for keeping DMT frames aligned to [the] <u>a</u> same frame timing [characterised by] <u>comprising</u> the steps of

[-]   estimating the time mis-alignment and power of cross-talk DMT signals added to a received DMT signal when the estimate is used by the modem to synchronise its own frame timing to a main cross-talkers frame timing<u>;</u> [and]

[-]   [that] <u>using</u> auto-correlation [is used] on the received signal and a delayed copy of the received signal<u>;</u> and

[-]   [that] <u>detecting</u> correlation maxima [detects] that determine the frame boundaries of different DMT components of the received signal.

2.   (Amended) A method, as claimed in claim 1 [characterised in that, the method uses the] <u>further comprising using an</u> inherent property of DMT signals and that part of the signal is correlated, in the time domain, in terms of cyclic extensions.

3.   (Amended) A method, as claimed in claim 1 [characterised in that, the method] further comprising the step [that] <u>wherein</u> the time mis-alignment of the cross-talk signals [estimates] <u>is estimated</u> as the distance between the correlation maximum corresponding to the desired signal (known location) and other correlation maxima.

4.   (Amended) A method, as claimed in claim 3 [characterised in that, the method] further comprising the step [that] <u>wherein</u> the amplitude of a correlation maximum is a relative measure of the power of the corresponding cross-talker.

5.   (Amended) A method, as claimed in claim 3 [characterised in that, the method] further comprising the step [that] <u>wherein,</u> when the time offset of the cross-talk is estimated at the <u>VDSL Transceiver Unit-Optical Network Unit (VTU-O),</u> this information will be used to

adjust its clock and frame boundaries to align with the cross-talker and hence orthogonality is achieved and the distortion is minimized.

6.   (Amended) A method, as claimed in claim 3 [characterised in that, the method] further comprising the step [that] wherein, if the auto-correlation peak amplitude of the cross-talk signal is low, the VDSL Transceiver Unit-Optical Network Unit (VTU-O) can choose to not align clock and frame boundaries since the cross-talker then [do] does not significantly contribute to the distortion and hence a threshold level will be used.

7.   (Amended) A method, [as claimed] as claimed in [any previous] claim 1 characterised in that the presented method to estimate frame boundaries of cross-talkers can be used for several other applications, e.g., NEXT cancellation algorithms and multi-user detection algorithms.

8.   (Amended) A method, [as claimed] as claimed in [any previous] claim 1 characterised in that the presented method to estimate frame boundaries of cross-talkers every starting-up modem in a system uses this method result in that all modems that cause interference in each other's receivers will become aligned to the same frame timing.